
Space Weather Forecast

Issued on Friday, 14 April 2023 at 12:06 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Chance of Moderate X-ray flares (R1-R2 Minor-Moderate radio blackouts) throughout.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low over the past 24 hours, with only minor Common-class flares. There are currently eight sunspot regions on the visible disc. The region closest to the southeast limb is slowly becoming clearer, and is now the largest region on the disc with a large leading spot, but it is still difficult to assess the magnetic complexity. A relatively new region in the southwest has continued to grow, with some magnetic complexity forming. The other region in the southwest has continued to show fading of its intermediate and trailing spots. A further region in the southeast currently appears fairly straightforward, although with numerous spots. A new region near the northeast limb is also slowly becoming more clearly visible, but again the magnetic structure is still difficult to fully assess. The other regions are small and simple at the present time.

There have been no Earth-directed Coronal Mass Ejections (CMEs) observed in available imagery over the past 24 hours.

Solar Wind / Geomagnetic Activity: The solar wind was mostly at background levels throughout. The wind speed varied between 340-430 km/s. The Interplanetary Magnetic Field was weak, with the north-south component also varying weakly. Geomagnetic activity was Quiet (Kp 1-2).

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be low to moderate, with a chance of isolated Moderate-class X-ray flares.

Solar Wind / Geomagnetic Activity: There is a low possibility of a glancing CME arrival on Day 3 (16 April). Otherwise, solar winds are likely to start at ambient levels, but may become slightly elevated later on 14 April due to 'coronal hole' fast winds.

Resulting geomagnetic activity is expected to generally be Quiet to Unsettled, with a chance of Active intervals, most likely in association with any low confidence transitory CME impact.

Energetic Particles / Solar Radiation: Solar radiation storms are not expected in the period, although there is a slight chance of a greater than S1 event should any larger flares occur towards the western side of the disc.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	1	1	5	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	50	50	50	50
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	5	5	10	10
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)